

RAW SEQUENCE LISTING DATE: 01/29/2001
PATENT APPLICATION: US/09/701,588 TIME: 11:56:19

Input Set : A:\Pto.amc
Output Set: N:\CRF3\01292001\I701588.raw

SEQUENCE LISTING

5 (1) GENERAL INFORMATION:
7 (i) APPLICANT: Wang, Chang Yi
9 (ii) TITLE OF INVENTION: NOVEL LHRH PEPTIDE
10 IMMUNOGENS
12 (iii) NUMBER OF SEQUENCES: 122
14 (iv) CORRESPONDENCE ADDRESS:
15 (A) ADDRESSEE: Morgan & Finnegan, L.L.P.
16 (B) STREET: 345 Park Avenue
17 (C) CITY: New York
18 (D) STATE: NY
19 (E) COUNTRY: USA
20 (F) ZIP: 10154-0054
22 (v) COMPUTER READABLE FORM:
23 (A) MEDIUM TYPE: Floppy disk
24 (B) COMPUTER: IBM PC compatible
25 (C) OPERATING SYSTEM: PC Windows
26 (D) SOFTWARE: Word 97
28 (vi) CURRENT APPLICATION DATA:
C--> 29 (A) APPLICATION NUMBER: US/09/701,588
C--> 30 (B) FILING DATE: 29-Nov-2000
31 (C) CLASSIFICATION:
33 (vii) PRIOR APPLICATION DATA:
34 (A) APPLICATION NUMBER: 09/100,414
35 (B) FILING DATE: 20-JUNE-1998
37 (viii) ATTORNEY/AGENT INFORMATION:
38 (A) NAME: Maria H. Lin
39 (B) REGISTRATION NUMBER: 29,323
40 (C) REFERENCE/DOCKET NUMBER: 1151-158US1
42 (ix) TELECOMMUNICATION INFORMATION:
43 (A) TELEPHONE: 212-758-4800
44 (B) TELEFAX: 212-751-6849
46 (2) INFORMATION FOR SEQ ID NO: 1:
53 (i) SEQUENCE CHARACTERISTICS:
54 (A) LENGTH: 15 amino acids
55 (B) TYPE: amino acid
56 (D) TOPOLOGY: linear
58 (ii) MOLECULE TYPE: peptide
60 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:
62 Leu Ser Glu Ile Lys Gly Val Ile Val His Arg Leu
63 1 5 10
64 Glu Gly Val
65 15
67 (2) INFORMATION FOR SEQ ID NO: 2:
69 (i) SEQUENCE CHARACTERISTICS:
70 (A) LENGTH: 16 amino acids
71 (B) TYPE: amino acid

RAW SEQUENCE LISTING
 PATENT APPLICATION: US/09/701,588

DATE: 01/29/2001
 TIME: 11:56:19

Input Set : A:\Pto.amc
 Output Set: N:\CRF3\01292001\I701588.raw

```

72          (D) TOPOLOGY: linear
74      (ii) MOLECULE TYPE: peptide
76      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:
78          Asp Leu Ser Asp Leu Lys Gly Leu Leu Leu His Lys
79              1          5          10
80          Leu Asp Gly Leu
81              15
83 (2) INFORMATION FOR SEQ ID NO: 3:
85      (i) SEQUENCE CHARACTERISTICS:
86          (A) LENGTH: 16 amino acids
87          (B) TYPE: amino acid
C--> 88      (D) TOPOLOGY: LINEAR
90      (ii) MOLECULE TYPE: peptide
92      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:
94          Glu Ile Ser Glu Ile Arg Gly Ile Ile Ile His Arg
95              1          5          10
96          Ile Glu Gly Ile
97              15
104 (2) INFORMATION FOR SEQ ID NO: 4:
106      (i) SEQUENCE CHARACTERISTICS:
107          (A) LENGTH: 16 amino acids
108          (B) TYPE: amino acid
C--> 109      (D) TOPOLOGY: LINEAR
111      (ii) MOLECULE TYPE: peptide
113      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
115          Asp Val Ser Asp Val Lys Gly Val Val Val His
116              1          5          10
117          Lys Val Asp Gly Val
118              15
120 (2) INFORMATION FOR SEQ ID NO: 5:
122      (i) SEQUENCE CHARACTERISTICS:
123          (A) LENGTH: 16 amino acids
124          (B) TYPE: amino acid
C--> 125      (D) TOPOLOGY: LINEAR
127      (ii) MOLECULE TYPE: peptide
129      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:
131          Asp Phe Ser Asp Phe Lys Gly Phe Phe Phe His
132              1          5          10
133          Lys Phe Asp Gly Phe
134              15
136 (2) INFORMATION FOR SEQ ID NO: 6:
138      (i) SEQUENCE CHARACTERISTICS:
139          (A) LENGTH: 15 amino acids
140          (B) TYPE: amino acid
141          (D) TOPOLOGY: linear
143      (ii) MOLECULE TYPE: peptide
149      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:
151          Ile Ser Glu Ile Lys Gly Val Ile Val His Lys Ile
152              1          5          10

```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/701,588

DATE: 01/29/2001
TIME: 11:56:19

Input Set : A:\Pto.amc
Output Set: N:\CRF3\01292001\I701588.raw

```
153      Glu Gly Ile
154          15
156 (2) INFORMATION FOR SEQ ID NO: 7:
158     (i) SEQUENCE CHARACTERISTICS:
159         (A) LENGTH: 15 amino acids
160         (B) TYPE: amino acid
161         (D) TOPOLOGY: linear
163     (ii) MOLECULE TYPE: peptide
165     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:
167         Met Thr Glu Ile Arg Thr Val Ile Val Thr Arg Met
168             1           5           10
169         Glu Thr Met
170             15
172 (2) INFORMATION FOR SEQ ID NO: 8:
174     (i) SEQUENCE CHARACTERISTICS:
175         (A) LENGTH: 15 amino acids
176         (B) TYPE: amino acid
177         (D) TOPOLOGY: linear
179     (ii) MOLECULE TYPE: peptide
181     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:
183         Leu Ser Glu Ile Lys Gly Val Ile Val His Lys Leu
184             1           5           10
185         Glu Gly Val
186             15
188 (2) INFORMATION FOR SEQ ID NO: 9:
190     (i) SEQUENCE CHARACTERISTICS:
191         (A) LENGTH: 15 amino acids
192         (B) TYPE: amino acid
193         (D) TOPOLOGY: linear
200     (ii) MOLECULE TYPE: peptide
202     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:
204         Ile Thr Glu Ile Arg Thr Val Ile Val Thr Arg Ile
205             1           5           10
206         Glu Thr Ile
207             15
209 (2) INFORMATION FOR SEQ ID NO: 10:
211     (i) SEQUENCE CHARACTERISTICS:
212         (A) LENGTH: 15 amino acids
213         (B) TYPE: amino acid
214         (D) TOPOLOGY: linear
216     (ii) MOLECULE TYPE: peptide
218     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:
220         Met Ser Glu Ile Lys Gly Val Ile Val His Lys Leu
221             1           5           10
222         Glu Gly Met
223             15
225 (2) INFORMATION FOR SEQ ID NO: 11:
227     (i) SEQUENCE CHARACTERISTICS:
228         (A) LENGTH: 15 amino acids
```

RAW SEQUENCE LISTING DATE: 01/29/2001
 PATENT APPLICATION: US/09/701,588 TIME: 11:56:19

Input Set : A:\Pto.amc
 Output Set: N:\CRF3\01292001\I701588.raw

```

229      (B) TYPE: amino acid
230      (D) TOPOLOGY: linear
232      (ii) MOLECULE TYPE: peptide
234      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:
236      Leu Thr Glu Met Arg Thr Val Ile Val Thr Arg Met
237      1          5          10
238      Glu Thr Val
239      15
246 (2) INFORMATION FOR SEQ ID NO: 12:
248      (i) SEQUENCE CHARACTERISTICS:
249          (A) LENGTH: 15 amino acids
250          (B) TYPE: amino acid
251          (D) TOPOLOGY: linear
253      (ii) MOLECULE TYPE: peptide
255      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:
257      Ile Thr Glu Ile Arg Thr Val Ile Val Thr Arg Ile
258      1          5          10
259      Glu Thr Ile
260      15
262 (2) INFORMATION FOR SEQ ID NO: 13:
264      (i) SEQUENCE CHARACTERISTICS:
265          (A) LENGTH: 15 amino acids
266          (B) TYPE: amino acid
267          (D) TOPOLOGY: linear
269      (ii) MOLECULE TYPE: peptide
271      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:
273      Met Ser Glu Met Lys Gly Val Ile Val His Lys Met
274      1          5          10
275      Glu Gly Met
276      15
278 (2) INFORMATION FOR SEQ ID NO: 14:
280      (i) SEQUENCE CHARACTERISTICS:
281          (A) LENGTH: 15 amino acids
282          (B) TYPE: amino acid
283          (D) TOPOLOGY: linear
285      (ii) MOLECULE TYPE: peptide
292      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:
294      Leu Thr Glu Ile Arg Thr Val Ile Val Thr Arg Leu
295      1          5          10
296      Glu Thr Val
297      15
299 (2) INFORMATION FOR SEQ ID NO: 15:
301      (i) SEQUENCE CHARACTERISTICS:
302          (A) LENGTH: 19 amino acids
303          (B) TYPE: amino acid
304          (D) TOPOLOGY: linear
306      (ii) MOLECULE TYPE: peptide
308      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:
310      Ile Ser Ile Ser Glu Ile Lys Gly Val Ile Val His

```

RAW SEQUENCE LISTING DATE: 01/29/2001
PATENT APPLICATION: US/09/701,588 TIME: 11:56:19

Input Set : A:\Pto.amc
Output Set: N:\CRF3\01292001\I701588.raw

```
311          1          5          10
312      Lys Ile Glu Gly Ile Leu Phe
313          15
315 (2) INFORMATION FOR SEQ ID NO: 16:
317      (i) SEQUENCE CHARACTERISTICS:
318          (A) LENGTH: 19 amino acids
319          (B) TYPE: amino acid
320          (D) TOPOLOGY: linear
322      (ii) MOLECULE TYPE: peptide
323      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:
325      Ile Ser Met Thr Glu Ile Arg Thr Val Ile Val Thr
326          1          5          10
327      Arg Met Glu Thr Met Leu Phe
328          15
330 (2) INFORMATION FOR SEQ ID NO: 17:
332      (i) SEQUENCE CHARACTERISTICS:
333          (A) LENGTH: 19 amino acids
334          (B) TYPE: amino acid
335          (D) TOPOLOGY: linear
343      (ii) MOLECULE TYPE: peptide
345      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:
347      Ile Ser Leu Ser Glu Ile Lys Gly Val Ile Val His
348          1          5          10
349      Lys Leu Glu Gly Val Leu Phe
350          15
352 (2) INFORMATION FOR SEQ ID NO: 18:
354      (i) SEQUENCE CHARACTERISTICS:
355          (A) LENGTH: 19 amino acids
356          (B) TYPE: amino acid
357          (D) TOPOLOGY: linear
359      (ii) MOLECULE TYPE: peptide
361      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:
363      Ile Ser Ile Thr Glu Ile Arg Thr Val Ile Val Thr
364          1          5          10
365      Arg Ile Glu Thr Ile Leu Phe
366          15
368 (2) INFORMATION FOR SEQ ID NO: 19:
370      (i) SEQUENCE CHARACTERISTICS:
371          (A) LENGTH: 19 amino acids
372          (B) TYPE: amino acid
373          (D) TOPOLOGY: linear
375      (ii) MOLECULE TYPE: peptide
376      (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:
378      Ile Ser Leu Ser Glu Ile Lys Gly Val Ile Val His
379          1          5          10
381      Lys Leu Glu Gly Met Leu Phe
382          15
389 (2) INFORMATION FOR SEQ ID NO: 20:
391      (i) SEQUENCE CHARACTERISTICS:
```

VERIFICATION SUMMARY DATE: 01/29/2001
PATENT APPLICATION: US/09/701,588 TIME: 11:56:20

Input Set : A:\Pto.amc
Output Set: N:\CRF3\01292001\I701588.raw

L:29 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]
L:30 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
L:88 M:220 C: Keyword misspelled or invalid format, [(D) TOPOLOGY:]
L:109 M:220 C: Keyword misspelled or invalid format, [(D) TOPOLOGY:]
L:125 M:220 C: Keyword misspelled or invalid format, [(D) TOPOLOGY:]
L:1562 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:79
L:2410 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:120
L:2433 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:121
L:2450 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:122